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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,301	01/07/2002	Yukinobu Yamazaki	020001	5983

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EXAMINER

HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 02/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/019,301

Applicant(s)

YAMAZAKI ET AL.

Examiner

Eric Hug

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 17 and 19 is/are rejected.
- 7) ☒ Claim(s) 14, 16, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3-6, 12, 13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al (JP 09-316252, machine translation). Yamazaki discloses a three component water-dispersable hot melt composition for moistureproof paper. The composition comprises equal parts of a polyolefin resin (compound A, which is also compound A of the present invention) and a tackifier (compound C, which is compound B of the present invention). The composition also comprises 10-60% by weight of a wax (compound B). The amount of wax is critical to the dispersability of the other two components (see paragraph [0010]). Therefore, in effect, the wax is a compatibilizer (compound C of the present invention). In compositions where the wax component is between 10-20% by weight of the overall mixture (which reads on the range of component C of the present invention), then the polyolefin resin and tackifier in equal parts will both be between 40-45% (which read on the range of components A and B of the present invention). Therefore, the composition as just described reads on claim 1. With respect to the other claims:

Claim 3: The polyolefin is an amorphous polypropylene (atactic polypropylene).

Claim 4: The polyolefin can comprise only propylene monomers or be copolymers of propylene, ethylene, and/or 1-butene.

Claims 5, 6: The tackifying resin comprises several of the claimed resin materials (see paragraph [0008]).

Claims 12, 13, 17: The resin composition is applied to one side of a floorlining paper, making it a moistureproof paper. The phrase “for foods” in claim 13 is a statement of intended use and does not distinguish the present invention from that of the reference.

2. Claims 1, 2, 4-9, 12, 13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirakura et al (US 5,466,519). Shirakura discloses a waterproof resin for forming coating layers onto a paper substrate. The resin comprises a polyolefin, a tackifying resin, and optionally an adhesive resin. Titanium dioxide, talc, kaolin, or calcium carbonate may also be added. The composition reads on the claims as follows:

Claim 1: The tackifier is 0.5-60% of the waterproof resin composition. When no adhesive resin is present, then the polyolefin comprises 40-99.5% of the composition. This reads on the claimed range. When adhesive resin is present, it is in the amount of 5-500% of the resin. Thus, it is possible to have a composition with all three components present in quantities within the claimed amounts.

Claim 2: The composition can comprise up to 5-60% titanium dioxide (column 4, lines 62-65) or up to 30% talc, kaolin, or calcium carbonate (column 6, lines 9-29).

Claim 4: The polyolefin can comprise polypropylene (column 3, lines 39-47).

Claims 5, 6: The tackifier can be rosin or any one of the claimed resins (column 5, lines 30-51).

Claim 7: The adhesive resin can be an acid-modified polyolefin, such as an ethylene-acrylic acid copolymer (see column 5, line 52 to column 6, line 8).

Claims 8, 9: The inorganic fillers have an average particle size less than 5 microns. The titanium dioxide is 0.1-0.4 microns and the others are 0.01-1 microns.

Claims 12, 13, 17: Shirakura produces a waterproof photographic paper by applying two layers of waterproof resin to the surface of a paper substrate. The phrase "for foods" in claim 13 is a statement of intended use and does not distinguish the present invention from that of the reference.

3. Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Higuchi et al (US 3,893,883). Higuchi discloses a heat bondable sheet material comprising an adhesive composition having 100 parts polyethylene and 5-45 parts terpene resin. This reads on the claimed composition having 0% compatibilizer.

4. Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Morganelli (US 5,454,909). Morganelli discloses a low-density hot melt adhesive comprised of 10-99.7% polyolefin, 0-85% tackifier, and 0-50% wax, plus 0.1% low density filler. The polyolefin can be polypropylene (see column 2, lines 33-48). The tackifier can be a terpene resin or rosin, for example (see column 2, lines 49-66). A composition with 0% wax reads on the claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirakura et al (US 5,466,519) in view of Morganelli and in view of the attached tables of physical properties for titanium dioxide and calcium carbonate. Shirakura discloses the waterproof resin described above. The resin can contain substantial amounts of titanium dioxide, calcium carbonate, clay, or talc. Shirakura does not disclose the density of the resin composition, thus does not disclose that the density is at least 1.0 g/cm<sup>3</sup>. In Morganelli, it is disclosed that typical polyolefin resin compositions not having any filler will have a density of about 0.92-0.95. Thus, it is expected that the unfilled resin of Shirakura will also have a density below 1.0.

The attached tables\* show physical properties for titanium dioxide and calcium carbonate. The specific gravity of titanium dioxide is 3.84 for anatase and 4.26 for rutile. The specific gravity of calcium carbonate is 2.930 for natural aragonite. Since the resin compositions of Shirakura contain up to 60% titanium dioxide or up to 30% calcium carbonate, then it would be obvious to one skilled in the art that such resin compositions containing filler will have a final density greater than 1.0 g/cm<sup>3</sup>, because the density of the filler material is much greater than 1.0 g/cm<sup>3</sup>.

\*- Source: CRC Handbook of Chemistry and Physics, 71st edition, 1990-1991.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirakura et al (US 5,466,519) in view of Gaveske (US 6,025,032). Shirakura discloses the resin described above, and specifies that a dye may be added to the resin if desired (column 9, line 1). This information is not enough to suggest that the die match the color of the paper substrate.

Gaveske discloses a waterproofing composition comprising a polyolefin polymer and a coumarone-indine resin. The coating composition may optionally include a pigment or dye (column 9, lines 23-32). The pigment or dye may impart a desired color to the coating composition or may be added for aesthetic purposes. The pigment or dye may also be included in the coating composition for determining which portion of a surface has been covered by the coating composition. Thus, Gaveske provides enough evidence to suggest that the dye can match that of a paper substrate if desired. Therefore, at the time of the invention, it would have been obvious to one skilled in the art to add a dye to the resin of Shirakura which matches the paper and hides any undesirable effects due to the presence of the waterproofing resin.

7. Claims 1, 4-6, 12, 13, 15, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yazaki et al (US 4,086,116) in view of Morganelli (US 5,454,909). Yazaki discloses a water-resistant corrugating cardboard adhesive for bonding together two plies. The adhesive comprises a thermoplastic polymer, a resin tackifier, and a plasticizer (see column 6, lines 15-26). The thermoplastic can be a polyolefin, such as polypropylene. The tackifier can be a rosin or petroleum resin. The adhesive composition is applied between faces of a core sheet and a liner sheet, both which are made of paper and both which make up the corrugated

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cardboard. Yazaki reads on the present invention except that Yazaki does not expressly disclose the ratios of components in the adhesive composition.

As described above, Morganelli discloses a hot melt adhesive composition comprising a polyolefin and tackifier. The adhesive is useful for bonding corrugated cardboard. Morganelli expressly discloses how much of each component is to be used so that the composition will have the desired physical properties necessary for a hot-melt adhesive. The quantities disclosed by Morganelli read on the claims. Therefore, at the time of the invention, it would have been obvious to one skilled in the art to make the composition of Yazaki within the given ratios as disclosed by Morganelli so that the resulting adhesive will have the proper viscosity and tack.



*Allowable Subject Matter*

Claims 14, 16, 18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:


Claims 14 and 18 are allowable, because the prior art does not disclose or suggest a water-resistant and moisture-proof paper or a method for producing a water-resistant and moisture-proof paper whereby the paper comprises the claimed waterproof resin layer and additionally comprises a methacrylic resin coating formed on the waterproof layer.


Claims 16 and 20 are allowable, because the prior art does not disclose or suggest a water-resistant and moisture-proof paper or a method for producing a water-resistant and moisture-proof paper whereby the paper comprises the claimed waterproof resin layer and additionally whereby a penetration-proof layer is applied to at least one face of a paper substrate before contact with the waterproof resin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.

  
jeh  
February 13, 2003

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
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